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October 16, 2018^{1/}

VIA ELECTRONIC FILING

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: *Ex Parte Notification*

GN Docket No. 17-258, *Promoting Investment in the 3550-3700 MHz Band*;
ET Docket No. 18-295, *Unlicensed Use of the 6 GHz Band*;
GN Docket No. 17-183, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*; and
GN Docket No. 18-122, *Expanding Flexible Use of the 3.7 GHz to 4.2 GHz Band*.

Dear Ms. Dortch:

On October 11, Russell Fox of Mintz and I conducted meetings with Rachael Bender, Legal Advisor to Chairman Pai; Erin McGrath, Legal Advisor to Commissioner O’Rielly; Will Adams, Legal Advisor to Commissioner Carr; and Umair Javed, Legal Advisor to Commissioner Rosenworcel, regarding the above-referenced proceedings.

3.5 GHz

T-Mobile USA, Inc. (“T-Mobile”)^{2/} commends the Commission for announcing that it will consider adoption of amended rules governing the 3550-3700 MHz (“3.5 GHz”) band.^{3/} This band has significant potential to provide network capacity and ultimately be incorporated into 5G systems. However, the licensing structure originally adopted created technical challenges that would have severely limited the utility of the band and lacked the certainty of

^{1/} While Section 1.1206(b) of the rules would have otherwise required submission of this summary of *ex parte* communication on October 15, 2018, the Commission’s headquarters were closed that day (*see FCC Headquarters Closed on October 15*, Public Notice, DA 18-1050 (rel. Oct. 14, 2018)), making it a holiday pursuant to Section 1.4(e)(1) and postponing the submission deadline to today (*see* 47 CFR 1.4(j)).

^{2/} T-Mobile USA, Inc. is a wholly owned subsidiary of T-Mobile US, Inc., a publicly-traded company.

^{3/} *Promoting Investment in the 3550-3700 MHz Band*, Draft Report and Order, GN Docket No. 17-258 (rel. Oct. 2, 2018) (“*Draft Report and Order*”).

continued access necessary to drive investment.^{4/} This valuable mid-band spectrum risked being side-lined to an underutilized niche while the rest of the world focused on this band as a key component in the race for 5G. The changes in the *Draft Report and Order* go far towards addressing these technical and structural problems and provide a path to success for the band, while preserving the original experimental concept of the band – a three tier structure with a spectrum access system (“SAS”) controlling both licensed and unlicensed operations.

The Draft Report and Order Is a Reasonable Compromise

At the heart of many of the technical challenges with the original structure of the band was the use of census tracts for licensing. As T-Mobile and others demonstrated, use of these small areas creates interference conflicts with adjacent licensees that limits the potential to provide service.^{5/} Accordingly, T-Mobile and CTIA asked the Commission to license the band using Partial Economic Areas (“PEAs”), an approach that has proven in the past to be a reasonable middle ground between the needs of large carriers and others interested in using spectrum.^{6/} Given a lack of consensus on this approach among competing interests, T-Mobile later supported a compromise proposed by CTIA and CCA in an effort to move quickly toward resolution.^{7/} Despite those attempts to reach a resolution, other parties continued to insist on the original structure with no changes – a path aimed at satisfying a small number of entities with speculative business plans.

To break this impasse, the *Draft Report and Order* would appropriately increase the size of Priority Access Licenses (“PALs”) from census tracts to counties.^{8/} While T-Mobile has expressed concern that even county licensing creates technical and structural challenges, that approach provides significant relief compared to census tracts, particularly when combined with combinatorial bidding, as described in the *Draft Report and Order*. Yet, parties continue to urge

^{4/} See, e.g., Petition for Rulemaking of T-Mobile USA, Inc., GN Docket No. 12-354, *et al.*, at 16 (filed June 19, 2017).

^{5/} See, e.g., Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 1 (filed Aug. 9, 2018); Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, *et al.*, at 2 (filed July 3, 2018); Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile USA, Inc., John Hunter, Senior Director, Government Affairs, Technology and Engineering Policy, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 2-5 (filed Apr. 25, 2018).

^{6/} *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, ¶¶ 44, 77 (2014); *Use of Spectrum Bands Above 24 GHz for Mobile Radio Services*, Report and Order and Further Notice of Proposed Rulemaking, 31 FCC Rcd 8014, ¶ 82 (2016).

^{7/} Letter from Rebecca Murphy Thompson, Executive Vice President and General Counsel, CCA, and Scott K. Bergmann, Senior Vice President, Regulatory Affairs, CTIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 1 (filed Apr. 20, 2018).

^{8/} *Draft Report and Order* ¶ 19.

the Commission to retain census tract licensing.^{9/} But the Commission should adopt the structure proposed in the *Draft Report and Order*, which represents a reasonable compromise among the parties in this proceeding.^{10/} The *Draft Report and Order* helps address the limitations created by county-based licensing by stating that the Commission will seek comment on allowing package bids to facilitate bidding for the counties that comprise a complete Metropolitan Statistical Area in the top 305 markets.^{11/} T-Mobile agrees that this combinatorial bidding may enable some wireless providers to create more appropriately-sized service areas. While the approach in the *Draft Report and Order* departs from what T-Mobile and others would have preferred, it is time for the Commission to finalize rules so that this spectrum can be put to productive use.

The *Draft Report and Order* also correctly rejects other approaches.^{12/} The hybrid approach – under which different-sized PALs would be available in the same geographic area – would create even more technical concerns than those highlighted above. As the *Draft Report and Order* notes, “there are already significant complexities inherent to the 3.5 GHz authorization and spectrum coordination model, which involve the SAS coordinating access between and among the three tiers of users, including the protection of multiple discrete types of Incumbent user[s].”^{13/} The Commission should not introduce more complexities now.

Using Census Tracts Presents Documented Technical Challenges

Contrary to what others claim, using counties to license PALs instead of census tracts, is not a “policy decision.”^{14/} Instead, using county-based licensing represents the sounder technical choice. As T-Mobile and others demonstrated, the use of census tracts will create, among others, the following engineering and interference challenges that will materially impair licensees’

^{9/} See, e.g., Letter from LARIAT, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 1 (filed Oct. 10, 2018); Letter from Rural Advocacy Organizations to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 1-2 (filed Oct. 11, 2018).

^{10/} See *Draft Report and Order* ¶ 29 (“[C]ounties [are] an appropriate middle ground for this band, given that the characteristics of the 3.5 GHz band spectrum are favorable to support both localized and wide-area deployments.”); Commissioner O’Rielly Remarks before the 7th Annual Americas Spectrum Management Conference (Oct. 2, 2018) (“The rules will permit mobile and fixed use to be offered by large and small, urban and rural, and incumbent and new providers.”); Fact Sheet of Commissioner O’Rielly, CBRS Report and Order: Fixing the Rules to Enable Mid-Band 5G, at 1 (rel. Oct. 2, 2018) (“In the end, the county approach is supported by the representatives of the entire mobile wireless industry, the cable industry, the rural telecommunications industry, and many wireless ISPs.”).

^{11/} *Draft Report and Order* ¶ 40.

^{12/} *Id.* ¶ 13.

^{13/} *Id.* ¶ 41.

^{14/} See, e.g., Letter from Stephen E. Coran, Wireless Internet Service Providers Association, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 2 (filed Sept. 10, 2018); Letter from David D. Rines, IIoT Coalition, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258, at 4-5 (filed Sept. 7, 2018).

ability to use their authorized spectrum – and the ability of SAS administrators to manage the spectrum for both licensed and General Authorized Access (“GAA”) users.^{15/}

- With small license areas, there is a much higher likelihood that when a licensee seeks to deploy a Citizens Broadband Radio Service Device (“CBSD”), there will be a nearby PAL Protection Area (“PPA”) that requires protection, forcing the licensee to reduce power, move its CBSD away from the co-channel PPA, use antenna tilt, limit transmission in one or more directions, or take other steps to protect the transmitter deployed in the adjacent geographic area.
- This problem is even further exacerbated because Time Division Duplex-Long Term Evolution (“TDD-LTE”) technologies will be deployed in the band, and TDD-LTE requires coordination among co-channel and adjacent channel systems at geographic area borders to manage and contain interference, making synchronization of the adjacent TDD-LTE networks necessary to prevent cross-cell interference.
- The use of census tracts will especially limit spectrum use in urban areas because there are more census tracts per square mile and more licensees the SAS will be required to protect. And the result will restrict the use of spectrum by *both* PAL holders and GAA users. The SAS will assign channels dynamically and therefore would be required to assign channels that might otherwise be available for GAA operations to accommodate PAL access.

Other Mid-Band Proceedings

The Commission also released a *Draft Notice of Proposed Rulemaking* that, if adopted, would seek comment on the use of the 5925-7125 MHz band for unlicensed operations.^{16/} In its comments in response to the *Notice of Inquiry* in the proceeding leading to the draft, T-Mobile suggested that the Commission consider allocating some of the spectrum in that band for licensed use.^{17/} However, if the Commission designates the entire 5925-7125 MHz band for unlicensed operations – over 1 gigahertz of spectrum – it must take alternative action to designate mid-band spectrum for licensed wireless mobile broadband. In particular, it should make as much of the 3.7-4.2 GHz band available for that purpose as soon as possible. While the 3.5 GHz band is a good start to making mid-band spectrum available for licensed use, the amount of spectrum in the band is limited and technical restrictions impede its utility.

T-Mobile has already suggested a mechanism for converting the 3.7-4.2 GHz band to mobile broadband use and shown how incumbent operations can be relocated from, or accommodated

^{15/} Reply Comments of T-Mobile USA, Inc., GN Docket No. 17-258, at 26-27 (filed Jan. 29, 2018). T-Mobile’s analysis was confirmed in an *ex parte* letter covering a meeting between Commission staff, AT&T and CommScope. Letter from Stacey Black, AT&T, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 17-258 (filed Apr. 5, 2018).

^{16/} *Unlicensed Use of the 6 GHz Band, et al.*, Draft Notice of Proposed Rulemaking, ET Docket No. 18-295, *et al.* (rel. Oct. 2, 2018).

^{17/} Comments of T-Mobile USA, Inc., GN Docket No. 17-183, at 17-19 (filed Oct. 2, 2017).

in, the band.^{18/} The T-Mobile plan relies on market-based mechanisms backstopped by appropriate Commission guidelines to ensure that as much spectrum as feasible, as quickly as possible, is transparently made available for mobile wireless broadband use. Making only a limited amount of spectrum available will restrict the number of participants that can make use of the band, a result contrary to the public interest. T-Mobile expects to further develop its proposal as part of the comments it plans to submit in the proceeding.

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Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter is being filed in the above-referenced dockets and a copy provided to the staff with whom we met. Please direct any questions regarding this filing to me.

Respectfully submitted,

/s/ Steve B. Sharkey

Steve B. Sharkey
Vice President, Government Affairs
Technology and Engineering Policy

cc: Rachael Bender
Erin McGrath
Will Adams
Umair Javed

^{18/} See Letter from Steve B. Sharkey, Vice President, Government Affairs, Technology and Engineering Policy, T-Mobile USA, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 18-122, at 2-4 (filed June 15, 2018).